

Measurement of Azimuthal Anisotropy for High p_T Charged Hadron at RHIC-PHENIX

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The azimuthal anisotropy on the particle emission is one of the most sensitive probes to study the early stage of high-energy heavy-ion collision. In non-central collisions, the initial spatial anisotropy is transferred to the final momentum anisotropy due to pressure gradient in the collision participants.

The strength of the anisotropy is consistent with the prediction by hydro-dynamical model for p_T lower than 2 GeV/c, but not for higher p_T . The strong suppression of hadron yields has been observed out to high p_T and this suppression is described by the picture of parton energy loss (jet quenching) in the dense matter. This jet quenching could also explain the azimuthal anisotropy in the high p_T region where the hard process is dominant.

We will present the p_T and centrality dependence of the azimuthal anisotropy for charged hadrons up to $8 \sim 10$ GeV/c in different energies and collision systems with RHIC-PHENIX data. The relation of the jet quenching effect to the azimuthal anisotropy will be discussed.